Appendix A

Airspace Redesign Alternatives Considered and Detailed Descriptions

This appendix includes a description of those airspace redesign alternatives considered, and discarded, as well as more detailed descriptions of those airspace redesign alternatives introduced and evaluated in Chapters 2 through 4.

Appendix A
AIRSPACE REDESIGN ALTERNATIVES CONSIDERED & DETAILED DESCRIPTIONS

A.1 Airspace Redesign Alternatives Considered

Airspace redesign offers the potential to improve operational efficiency using more current ATC procedures taking into account the new Runway 11/29 at Lambert St. Louis International Airport, today's traffic patterns and airline equipment, as well as the improvements in ATC and NAS technology.

Airspace design alternative plans were initially considered for this EA. One of the initial airspace redesign considerations focused on a corner post system similar to what is currently used at Atlanta and Dallas TRACONs.

A corner post system would route arriving aircraft to one of four arrival transfer points located at the corners of the St. Louis metropolitan airspace. A straight track from the arrival transfer point to the Lambert St. Louis airport would be used to route arriving aircraft; therefore, there are four primary arrival routes in a corner post system. Departing aircraft would be routed via several departure routes that use the airspace between the arrival routes. This would effectively segregate arriving and departing aircraft into different sections of airspace. As a result, the corner post system would provide efficient separation of arriving and departing aircraft.

A number of alternatives were explored earlier in the airspace redesign process. An early airspace workgroup was formed and developed a number of alternatives. These initial alternatives were assessed based upon the MAP airspace redesign team's comparison to the following criteria:

1. Benefit all St. Louis TRACON (T75) and Kansas City Center (ZKC) aviation users – including Lambert jets, satellite airport traffic, turboprops, props, over-flights and military aircraft.
2. Acceptable impact to other facilities (i.e., Kansas City, Memphis, Indianapolis, Chicago and Minneapolis Centers (i.e., ARTCCs);

   Springfield MO, Springfield IL, Evansville IN, Cape Girardeau MO and MIZZOU terminal radar approach control (TRACONs) facilities

   St. Louis Downtown Airport Traffic Control Tower (ATCT - CPS), St. Louis Regional ATCT (ALN), Scott AFB, Mid-America ATCT (BLV), Spirit of St. Louis ATCT (SUS)

3. Maintain/Increase the number of routes into and out of T75 airspace
4. Reduce complexity of ZKC east end airspace
5. Optimize use of new runway (W1W)
6. As volume and complexity increases, procedures and airspace should become more structured to balance the optimization of safety and efficiency

These initial alternatives are briefly described in the following paragraphs to demonstrate the scope of alternatives initially considered to address the MAP purpose and need. Many of these alternatives were not taken further due to their not meeting the initial evaluation criteria established by the airspace redesign team.

Note that the term long fix and short fix describe arrival delivery points that are relative in distance to one another. Long fix arrival points are higher in altitude than the short fixes which are closer to the runway traffic patterns.

Alternative 1

Arrivals: standard terminal arrival routes on the CSX VOR 075°, 165°, 255° and 345° radials with;

Jets – Long fix boundary @ 17,000 ft, (no speed) descending to 11,000 by downwind descent point, Short fix boundary @ 11,000 ft, & 250 knots.

Turboprops – Long fix boundary @ 11,000 ft, Short fix boundary @ 8,000 ft.

Props – boundary exists @ 4,000 or 5,000 ft.

Departures: 3 departure routes to the NE, 3 departure routes to the SE, 3 departure routes to the SW, and 3 departure routes to the NW.

Alternative 1 Disposition: Enhanced Target Generator (ETG) real time simulation of this alternative air traffic control scenario indicated that Alternative 1 was not a viable option.

Alternative 2

Arrivals: Same as Alternative 1

Departures: Same as Alternative 1

Alternative 2 Adjustments (i.e., from Alternative 1): HOWARD Military Operations Area (MOA) split further to the East; Sector 49 @ 10,000 ft. and below; Kansas City Center (ZKC) would acquire a portion of Chicago Center (ZAU) en route airspace; Sector 50/51 boundary change

Alternative 2 Disposition: Enhanced Target Generator (ETG) real time simulation of this alternative air traffic control scenario indicated that Alternative 2 was not a viable option.

Alternative 3

Expanded Airspace Alternative – airspace design team explored this through the conceptual stage

Alternative 3 Conceptual Ideas – Remote Columbia, MO airport surveillance radar (ASR) for T75 to expand over MIZZU approach (8,000 ft. to FL 230)

Establish new ASR north of STL (35 miles) to expand Sector 50 (8,000 ft. to FL 230)

Relocate Scott AFB/Mid-America ASR southeast of STL (12 miles) to expand airspace over portion of Sector 49/54

T75 airspace from FL 230 down in all areas except MIZZU approach

ZKC would vertically re-stratify sectors around T75

Alternative 3 Disposition: Initial assessment of costs and transition challenges to establish and relocate ASR equipment and rework facility boundaries for this scenario indicated that Alternative 3 was not a viable option.

Alternative 4

Arrivals: Same as present-day T75 airspace; present-day ZKC area configuration

Departures: Same as present-day T75 airspace present-day; ZKC area configuration

Alternative 4 Adjustments: Adding departure route into Gateway sector, and re-configuration of this Gateway specialty.

Alternative 4 Disposition: Alternative 4 was viable option, but was further changed into **Alternative 4A** after alterations to inbound and outbound radials were deemed better airspace design solutions for this alternative.

Alternative 5

Arrivals: Similar to Alternatives 1 and 2, however dual arrival routes would be established over the corner posts to feed STL when volume warrants. Feeder-high and feeder-low airspace arrival concept at the corner posts. Arrival procedures for jets and turboprops with base leg boundaries at 11,000 and 8,000 feet respectively.

Departures: One (1), departure procedure into each departure sector with a minimum of three transition procedures emanating from the primary departure procedure. Three departure positions would be established at T75. Initial jet departure altitude established @ 10,000 ft.

Alternative 5 Additional Adjustments: Establish new ASR WNW of STL. Relocate Scott AFUTURE BASELINE/MidAmerica ASR to optimize coverage. ZKC airspace expansion and establishment of high, medium and low arrival/departure sectors in the en route environment. Promotes establishment of East/West/North/South over-flight routes through T75 airspace. Promotes establishment of a by-pass airway structure around STL.

Alternative 5 Disposition: Initial assessment of costs and transition challenges to establish and relocate ASR equipment and rework facility boundaries for this scenario indicated Alternative 5 was not a viable option.

Based upon the narrowing of the previously described alternatives, a number of operationally viable alternatives were developed based upon these initial design activities. The **Future Baseline** alternative consists of the existing routing procedures with changes close to STL that allow for the full use of the new Runway 11/29. These close in changes are consistent with the allowable Runway headings

established in the St. Louis Runway (WIW) EIS.

Alternative 4A has evolved to include four (4) departure sectors in both northwest and southeast flow conditions.

Alternative 6 has evolved as a variant of Alternative 4A using dual short fix arrival routings with four (4) departure sectors in both northwest and southeast flow conditions and existing departure routing in the various departure routing quadrants.

Alternative 10 has evolved as a hybrid of Alternatives 4A and 6.

These alternative plans as well as a Future Baseline alternative plan are identified in **Table A.1-1**.

Table A.1-1; St Louis – Midwest Airspace Plan (MAP) Regional Airspace Redesign Alternatives

Volume Year Simulation Analysis	**Traffic Volume - Year 2006**	**Traffic Volume - Year 2013**
Alternative Plans	**Alternative Airspace Plan Descriptions**	
Future Baseline Alternative	Existing Airspace Procedures w/ the addition of a new air carrier primary instrument runway (Runway 11/29) at Lambert-St. Louis International Airport (**Note**: any localized and independent airspace changes implemented prior to the 2006 target implementation timeframe of this EA are not within the formal scope of this EA, but would be subject to separate environmental screening and/or analysis. Changes of this type if formally implemented or likely to be implemented will be considered in the Volume Years 2006 and 2013 analysis of the Future Baseline alternative).	
Alternative 4A	Four Corner Arrival, Restructured Departure Alternative	
Alternative 6	Dual Short Fix w/ Higher Long Fix Arrival Routes – Existing Departure Routes Alternative	
Alternative 10	Hybrid (i.e., Alts 4A & 6) Arrival Alternative, Restructured Departure Alternative	

A.2 Detailed Operational Alternatives Descriptions

The following subsections capture descriptions of the proposed alternatives considered in this EA. General descriptions of routings for jet, turboprop and propeller aircraft are explained as well as the general airspace structure for the given alternative.

General description information is broken down for the two primary flows that reflect the predominant runway alignment at Lambert-St. Louis International Airport. These flows are to the southeast on runways 12L, 12R and 11 (new runway), and to the northwest on runways 29 (new runway), 30L and 30R[1].

Where major changes in routing occur, or a totally new route is being established, these will be highlighted. In addition, air traffic control airspace design parameters as to how the airspace is being divided into manageable pieces called sectors will be identified. A high level analysis of the alternatives has been conducted using the purpose and need operational viability and efficiency goals identified in chapter two. This approach allows for a relative feel as to the manner in which each alternative satisfies these purpose and need goals.

St. Louis metropolitan area arrivals are routed into terminal airspace via one of four (4) primary arrival corridors for all four airspace redesign alternatives. This four-feeder arrival airspace design concept allows for greater flexibility in handling the changing traffic patterns that evolve over the course of a day.

Arrival routes for all four St. Louis alternative airspace designs include:

P = Petti (Vandalia VOR – Northeast Arrivals)

Q = Queball (Queball VOR – Southeast Arrivals)

K = Kayla (Trake VOR – West Arrivals)

A = Lorle (Rivers VOR – Northwest Arrivals)

The Petti arrivals transition into the St. Louis TRACON's (i.e., facility designation T75) airspace from the northeast. The Queball arrivals transition into T75 airspace from the southeast. The Kayla arrivals transition into T75 airspace from from the west. Finally, Lorle arrivals transition into T75 airspace from the northwest. These arriving aircraft are transitioned from Kansas City Center (ZKC) en route airspace to Saint Louis terminal area airspace controlled by the T75 facility.

As an example of the flexibility previously mentioned, during heavy arrival demand from the east, the Queball and Petti sectors would be split, each worked by one controller to handle the heavy arrival demand from the east. The Lorle and Kayla sectors would be split or combined and worked by one or two other controllers depending on traffic demand. During heavy arrival demand from the west, Kayla and Lorle would be split, and Petti and Qball split or combined to one or two other controllers. Splitting or combining sectors in these and other potential combinations would only be practical if there was one sector for each standard terminal arrival (STAR) procedure.

The manner in which these arrivals are transitioned to the runways differs in

each alternative based upon the particular airspace redesign departure routing structure and how the arrivals and departures were integrated into the specific airspace redesign alternative.

Note that southeast and northwest flows refer to the predominant runway headings, while T75 northeast, southeast, southwest and northwest quadrant descriptions refer to where particular departure flows leave T75 airspace. An easy way to remember this convention is that flows are related to runway usage and quadrants are related T75 peripheral airspace ingress and egress.

General descriptions of alternative airspace design departure routing scenarios will address airspace quadrant routings from T75 northeast, southeast, southwest and northwest airspace quadrants for jet and turboprop/prop routes. In addition, typical city-pair destinations using these T75 airspace departure quadrant routing procedures will illustrate destination airport departure routing approaches for each alternative airspace design scenario. Note that typical city-pair destinations may not seem to be the most direct routing for a given T75 airspace departure quadrant assignment. These T75 city-pair and departure quadrant pairings are dictated by the Kansas City Center (ZKC) airspace transition-integration routing agreements with the T75 terminal air traffic control facility, and are based upon demand for service from all ZKC traffic being routed through this particular en route airspace.

A.2.1 Future Baseline – Existing Airspace with New Runway 11/29 Initial Jet Departure and Final Arrival Runway Alignments as per W1W EIS

The Future Baseline alternative maintains the existing airspace constructs with the exception that the arrival runway alignments and initial jet departure runway headings are changed to reflect those identified in the Lambert-St. Louis International Airport New Runway (WIW) EIS. Since the new runway (11/29) has been approved through the analysis and findings of the previous EIS document, this regional airspace redesign EA has assumed the establishment of the new runway in the analysis and evaluation of St. Louis TRACON terminal airspace redesign alternatives. These alternative airspace redesign scenarios are outside of the Lambert-St. Louis International Airport environs previously analyzed in the runway EIS conducted for the establishment of the new runway.

Future Baseline Alternative – STL Southeast Runway Departure Flows

The Future Baseline southeast runway(s) departure flows (i.e., Runways 12L, 12R and 11) for the Future Baseline alternative maintain the existing two (2) sector departure airspace boundaries presently used.

Future Baseline (SE Flow); T75- NE Quadrant Airspace Departures

Future Baseline **southeast flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 100° that transitions to a total of three (3) T75 SE flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace jet departures include: Chicago; Milwaukee; New York area; Detroit; Indianapolis; Baltimore and Washington area; Pittsburgh; Boston; Raleigh-Durham; Columbus; Dayton; Hertford, CT; Norfolk; and Toronto Canada.

Future Baseline southeast flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 090° that transitions to a total of three (3) T75 SE flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace turboprop/prop departures include: South Bend, IN; Springfield, IL; Decatur, IL; Lafayette, IN; Champaign, IL; and Ft. Wayne, IN.

Future Baseline (SE Flow); T75 - SE Quadrant Airspace Departures

Future Baseline **southeast flow** jet departures to the T75 **southeast quadrant** airspace use one primary jet route departure heading, approximately 120° that transitions to a total of two (2) T75 SE flow/southeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace jet departures include: Washington area; Philadelphia; Louisville; Cincinnati, Charlotte; Atlanta; Jacksonville; Orlando; and Nashville.

Future Baseline southeast flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of three (3) T75 SE flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace turboprop/prop departures include: Pocket City, IN; Centralia, IL, Louisville, KY; Marion, IL; Evansville, IN; Paducha, KY; Decatur, IL; and Cape Girardeau, MO.

Future Baseline (SE Flow); T75 - SW Quadrant Airspace Departures

Future Baseline **southeast flow** jet departures to the T75 **southwest quadrant** airspace use two primary jet route departure headings, approximately 120° and 135° that transitions to a total of four (4) T75 SE flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace jet departures include: Albuquerque; San Diego; Birmingham;

Memphis; Ft. Lauderdale; Tampa; New Orleans; Little Rock; Shreveport; Houston; Ft. Smith, AR; Joplin, MO; Wichita, KS; and Ft. Leonard Wood, MO.

Future Baseline southeast flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of five (5) T75 SE flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace turboprop/prop departures include: Memphis; Ft. Smith, AR; Joplin, MO; Ft. Leonard Wood, MO; and Columbia, MO.

Future Baseline (SE Flow); T75 - NW Quadrant Airspace Departures

Future Baseline **southeast flow** jet departures to the T75 **northwest quadrant** airspace use three primary jet route departure headings, 100°, 120° and 135°. These transition to a total of three (3) T75 SE flow/northwest quadrant jet route headings. Representative city destinations for these T75 SE flow/northwest quadrant airspace jet departures include: Minneapolis-St. Paul; Honolulu; Las Vegas; Colorado Springs; Los Angeles; Denver; Portland; San Jose; Salt Lake City; San Francisco; Santa Anna; Sacramento; Kansas City; Sioux Falls, SD; Lincoln; Omaha; Seattle; and Des Moines. Note that Honolulu; Las Vegas; Los Angeles; San Jose; and Santa Anna will occasionally move to one of the southwest quadrant departure headings when winds aloft are strong out of the northwest.

Future Baseline southeast flow turboprop and propeller departures from the T75 northwest quadrant use two primary turboprop/prop route departure heading, approximately 090° and 170° that transition to a total of four (4) T75 SE flow/northwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northwest quadrant airspace turboprop/prop departures include: Sioux City, IA; Kansas City, MO; Des Moines; Lincoln; Omaha; Moline; Waterloo; and Burlington, IL.

Future Baseline Alternative – STL Northwest Runway Departure Flows

The Future Baseline northwest runway(s) departure flows (i.e., Runways 29, 30L and 30R) for the Future Baseline alternative also maintain the existing two (2) sector departure airspace boundaries.

Future Baseline (NW Flow); T75- NE Quadrant Airspace Departures

Future Baseline **northwest fl**ow jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of four (4) T75 NW flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace jet departures include: Chicago; Milwaukee; New York; Detroit; Indianapolis; Baltimore and Washington; Pittsburgh; Boston; Raleigh-Durham; Columbus; Dayton; Hertford, CT; and Norfolk.

Future Baseline northwest flow turboprop and propeller departures from the T75 northeast quadrant use one

primary turboprop/prop route departure heading, approximately 350° that transitions to a total of three (3) T75 NW flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace turboprop/prop departures include: South Bend, IN; Springfield, IL; Decatur, IL; Lafayette, IN; Champaign, IL; and Ft. Wayne, IN.

Future Baseline (NW Flow); T75 - SE Quadrant Airspace Departures

Future Baseline **northwest flow** jet departures to the T75 **southeast quadrant** airspace use three primary jet route departure headings, approximately 285°, 305° and 335°, that transition to a total of two (2) T75 NW flow/southeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/southeast quadrant airspace jet departures include: Washington area; Louisville; Cincinnati; Charlotte; Atlanta; Jacksonville; Orlando; and Nashville.

Future Baseline northwest flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of three (3) T75 NW flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southeast quadrant airspace turboprop/prop departures include: Pocket City, IN; Centralia, IL, Louisville, KY; Marion, IL; Evansville, IN; Paducha, KY; Decatur, IL; and Cape Girardeau, MO.

Future Baseline (NW Flow); T75 - SW Quadrant Airspace Departures

Future Baseline **northwest flow** jet departures to the T75 **southwest quadrant** airspace use one primary jet route departure heading, approximately 305° that transitions to a total of four (4) T75 NW flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace jet departures include: Birmingham; Memphis; Ft. Lauderdale; Tampa; New Orleans; Little Rock; Shreveport; Houston; Ft. Smith, AR; Joplin, MO; and Ft. Leonard Wood, MO.

Future Baseline northwest flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of five (5) T75 NW flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace turboprop/prop departures include: Memphis; Ft. Smith, AR; Joplin, MO; Ft. Leonard Wood, MO; and Columbia, MO.

Future Baseline (NW Flow); T75 - NW Quadrant Airspace Departures

Future Baseline **northwest flow** jet departures from the T75 **northwest quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of two (2) T75 NW flow/northwest quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northwest quadrant airspace jet departures include: Minneapolis-St. Paul; Honolulu; Las

Vegas; Colorado Springs; Los Angeles; Denver; Portland; San Jose; Salt Lake City; San Francisco; Santa Anna; Sacramento; Kansas City; Sioux Falls, SD; Lincoln; Omaha; Seattle; and Des Moines. Note that Honolulu; Las Vegas; Los Angeles; San Jose; and Santa Anna will occasionally move to one of the southwest quadrant departure headings when winds aloft are strong out of the northwest.

Future Baseline northwest flow turboprop and propeller departures to the T75 northwest quadrant use two primary turboprop/prop route departure heading, approximately 255° and 350° that transition to a total of four (4) T75 NW flow/northwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northwest quadrant airspace turboprop/prop departures include: Sioux City, IA; Kansas City, MO; Des Moines; Lincoln; Omaha; Moline; Waterloo; and Burlington, IL.

Future Baseline Alternative – Satellite Airport(s) Departure Flows

Satellite airports modeled in the study area include:

- Spirit of St. Louis Airport (SUS)
- St. Louis Downtown Airport - Cahokia Airport (CPS)
- St. Louis Regional Airport (ALN)
- Scott Air Force Base, Mid-America Airport (BLV)

Changes to satellite airport jet and high performance turboprop departures are primarily altitude caps at various distances from satellite airport navigational fixes to separate these satellite airport flows from STL arrival and departure flows. Once these altitude and distance parameters (e.g., do not climb above 5,000 ft. until 24 DME – 24 nautical miles using distance measurement equipment from a navigational fix) are met, these jet and high performance turboprop aircraft can climb on course to approved instrument flight plan altitudes.

The general jet and high performance turboprop altitude caps with associated distance parameters for Future Baseline Satellite departure procedure (DP) operations include:

Future Baseline - SUS Southeast Flow

SUS – Changes are for only jet and high performance turboprops to the north and east.

TWILA Intersection (E of SUS); <= 6K until 19 DME from SUS

NEENS Intersection (N of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 20 DME from SUS

BDF VOR (NNE of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 20 DME from SUS

CAP VOR (NE of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 20 DME from SUS

Future Baseline - SUS Northwest Flow

SUS – Changes are for only jet and high performance turboprops to the north and east.

TWILA Intersection (E of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 24 DME from SUS

NEENS Intersection (N of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 24 DME from SUS

BDF VOR (NNE of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 24 DME from SUS

CAP VOR (NE of SUS); < 5K or 6K (depending on current departure procedure (DP)) until 20 DME from SUS

Future Baseline - CPS Southeast Flow

CPS – Changes are for only jet and high performance turboprops to the north and east.

TWILA Intersection (E of CPS); < 4K until 8 DME from CPS

NEENS Intersection (N of CPS); < 4K until 16 DME from CPS, and < 6K until 22 DME CPS

BDF VOR (NNE of CPS); < 4K until 16 DME from CPS, and < 6K until 22 DME CPS

CAP VOR (NE of CPS); < 4K until 16 DME from CPS, and < 6K until 22 DME CPS

Future Baseline - CPS Northwest Flow

No changes to CPS northwest flow departure procedures.

Future Baseline - ALN Southeast Flow

ALN changes are only for the PLESS and BLUES departure procedures.

Pless Departure Procedure - PLESS Intersection (SE of ALN); < 4K until 6 DME ALN, and < 6K until 14 DME of ALN

Blues Departure Procedure – Uses Cardinal VOR 286° radial towards Centralia VOR (E of ALN); < 4K until 6 DME ALN, and < 6K until 14 DME of ALN

Future Baseline - ALN Northwest Flow

Blues and Pless Departure Procedure(s) - PLESS Intersection (SE of ALN); Blues Departure Procedure – Uses Cardinal VOR 286° radial towards Centralia VOR (E of ALN); both procedures < 6K until 14 DME of ALN

Future Baseline - BLV Southeast Flow

BLV changes are only for the Lindbergh jet and turboprop procedures to the southwest (i.e., Lindbergh – Vichy VOR and Lindbergh – Little Rock VOR)

Lindbergh departures; stay < 4K until 32 DME BLV

Future Baseline - BLV Northwest Flow

Blues and Pless Departure Procedure(s); stay < 4K until 16 DME of ALN

A.2.2 Alternative 4A – Four Corner Arrival, Restructured Departure Alternative

This alternative moves arrivals to a true four-corner post operation on radials that are at or nearly 45 degrees in relation to the alignment of primary Lambert-St. Louis International Airport runways. Lorle (Rivers VOR) arrivals enter T75 airspace more NNW, than the Future Baseline alternative which is approximately northwest. Two (2) new departure procedures are developed for this alternative and two (2) existing departure procedures are abandoned. Airspace is divided into 4 departure sectors to allow for greater flexibility in managing arrival and departure flows based upon peak hour ATC service demand levels.

Final arrival runway alignments and initial jet departure runway headings are reflected to coincide with those changes identified in the Lambert-St. Louis International Airport New Runway (WIW) EIS. Since the new runway (11/29) has been approved through the analysis and findings of this previous EIS document, this airspace redesign EA has assumed the establishment of this new runway in the analysis and evaluation of terminal airspace redesign alternatives that are outside of the Lambert-St. Louis International Airport environs analyzed in the previously conducted runway EA.

Alternative 4A – STL Southeast Runway Departure Flows

The southeast runways departure flows (e.g., Runways 12L, 12R and 11) of Alternative 4A move to a four (4) sector departure airspace boundary configuration. This new sector boundary configuration allows for greater flexibility in handling peak hour arrival and departure ATC service demand levels.

Alternative 4A (SE Flow); T75- NE Quadrant Airspace Departures

Alternative 4A **southeast flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 100° that transitions to a total of three (3) T75 SE flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A southeast flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 090° that transitions to a total of three (3) T75 SE flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace turboprop/propeller departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A (SE Flow); T75 - SE Quadrant Airspace Departures

Alternative 4A **southeast flow** jet departures to the T75 **southeast quadrant** airspace use one primary jet route departure heading, approximately 120° that transitions to a total of three (3) T75 SE flow/southeast quadrant jet transition route headings. This alternative differs from the Future

Baseline Alternative in that the RAMMS-NABB departure procedure is added to southeast quadrant departures in this alternative. Representative city destinations for these T75 SE flow/southeast quadrant airspace jet departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A southeast flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of three (3) T75 SE flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace turboprop/propeller departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A (SE Flow); T75 - SW Quadrant Airspace Departures

Alternative 4A **southeast flow** jet departures to the T75 **southwest quadrant** airspace use two primary jet route departure headings, approximately 120° and 135°, that transition to a total of four (4) T75 SE flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace jet departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 4A southeast flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 190° that transitions to a total of four (4) T75 SE flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace turboprop/propeller departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 4A (SE Flow); T75 - NW Quadrant Airspace Departures

Alternative 4A **southeast flow** jet departures to the T75 **northwest quadrant** airspace use three primary jet route departure headings, approximately 105°, 120° and 135°, that transition to a total of three (3) T75 SE flow/northwest quadrant jet transition route headings. A new OZARK-KIRKSVILLE (northwest) departure procedure replaces the CARDS-NEENS (north) procedure used in the Future Baseline Alternative.

Representative city destinations for these T75 SE flow/northwest quadrant airspace jet departures include: Minneapolis-St. Paul; Honolulu; Las Vegas; Colorado Springs; Los Angeles; Denver; Portland; San Jose; Salt Lake City; San Francisco; Santa Anna; Sacramento; Kansas City; Sioux Falls, SD; Lincoln; Omaha; Seattle; and Des Moines. Note that Honolulu; Las Vegas; Los Angeles; San Jose; and Santa Anna will occasionally move to one of the southwest quadrant departure headings when winds aloft are strong out of the northwest.

Alternative 4A southeast flow turboprop and propeller departures to the T75 northwest quadrant use two primary turboprop/prop route departure headings, approximately 090° and 190°, that transition to a total of three (3) T75 SE

flow/northwest quadrant turboprop/prop transition route headings. Note that the CARDS-NEENS and CARDS-LEBOY departures are no longer used. Representative city destinations for these T75 SE flow/northwest quadrant airspace turboprop/propeller departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 4A Alternative – STL Northwest Runway Departure Flows

The Alternative 4A northwest runway(s) departure flows (i.e., Runways 29, 30L and 30R) also move to a four (4) sector departure airspace boundary configuration. Again, this new sector boundary configuration allows for greater flexibility in handling peak hour arrival and departure ATC service demand levels.

Alternative 4A (NW Flow); T75- NE Quadrant Airspace Departures

Alternative 4A **northwest flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of three (3) T75 NW flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A northwest flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 350° that transitions to a total of three (3) T75 NW flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace turboprop/prop departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A (NW Flow); T75 - SE Quadrant Airspace Departures

Alternative 4A **northwest flow** jet departures to the T75 **southeast quadrant** airspace use three primary jet route departure headings, approximately 285°, 305° and 335°, that transition to a total of three (3) T75 SE flow/southeast quadrant jet transition route headings. This alternative differs from the Future Baseline Alternative in that the RAMMS-NABB departure procedure is added to southeast quadrant departures in this alternative. Representative city destinations for these T75 NW flow/southeast quadrant airspace jet departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A northwest flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of three (3) T75 NW flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 southeast quadrant airspace turboprop/prop departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 4A (NW Flow); T75 - SW Quadrant Airspace Departures

Alternative 4A **northwest flow** jet departures from the T75 **southwest quadrant** airspace use one primary jet route departure heading, approximately 305° that transitions to a total of four (4) T75 NW flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 southwest quadrant airspace jet departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 4A northwest flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of five (5) T75 NW flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace turboprop/prop departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 4A (NW Flow); T75 - NW Quadrant Airspace Departures

Alternative 4A **northwest flow** jet departures from the T75 **northwest quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of three (3) T75 NW flow/northwest quadrant jet transition route headings. A new OZARK-KIRKSVILLE (northwest) departure procedure replaces the CARDS-NEENS (north) procedure used in the Future Baseline Alternative.

Representative city destinations for these T75 NW flow/northwest quadrant airspace jet departures include: Honolulu; Las Vegas; Colorado Springs; Los Angeles; Denver; Portland; San Jose; Salt Lake City; San Francisco; Santa Anna; Sacramento; Kansas City; Sioux Falls, SD; Lincoln; Omaha; Seattle; and Des Moines. Note that Honolulu; Las Vegas; Los Angeles; San Jose; and Santa Anna will occasionally move to one of the southwest quadrant departure headings when winds aloft are strong out of the northwest.

Alternative 4A northwest flow turboprop and propeller departures to the T75 northwest quadrant use two primary turboprop/prop route departure heading, approximately 350° that transition to a total of two (2) T75 NW flow/northwest quadrant turboprop/prop transition route headings. Note that the CARDS-NEENS and CARDS-LEBOY departures are no longer used. Representative city destinations for these T75 NW flow/northwest quadrant airspace turboprop/prop departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

A.2.3 Alternative 6 – Dual Short Fix w/ Higher Long Fix Arrival Routes – Existing Departure Routes Alternative

This alternative also moves arrivals to a four-corner post operation that is more like the Future Baseline in relation to the alignment of primary Lambert-St. Louis International Airport runways. No new departure procedures are developed for this alternative. Airspace is also divided into 4 departure sectors to allow for greater flexibility in managing arrival and departure flows based upon peak hour ATC service demand levels. The major difference between Alternative 6 and the Future Baseline is that jet arrivals and jet departures are segregated in such a manner that departures climb to 10,000 feet without the repeated need to change heading to avoid arrivals.

As in Alternative 4A, Alternative 6 final arrival runway alignments and initial jet departure runway headings are reflected to coincide with those changes identified in the Lambert-St. Louis International Airport New Runway (WIW) EIS. Since the new runway (11/29) has been approved through the analysis and findings of this previous EIS document, this airspace redesign EA has assumed the establishment of this new runway in the analysis and evaluation of terminal airspace redesign alternatives that are outside of the Lambert-St. Louis International Airport environs analyzed in the previously conducted runway EA.

Alternative 6 – STL Southeast Runway Departure Flows

The southeast runways departure flows (e.g., Runways 12L, 12R and 11) of Alternative 6 move to a four (4) sector departure airspace boundary configuration. This new sector boundary configuration allows for greater flexibility in handling peak hour arrival and departure ATC service demand levels.

Alternative 6 (SE Flow); T75- NE Quadrant Airspace Departures

Alternative 6 **southeast flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 100° that transitions to a total of three (3) T75 SE flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 southeast flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 090° that transitions to a total of three (3) T75 SE flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 (SE Flow); T75 - SE Quadrant Airspace Departures

Alternative 6 **southeast flow** jet departures to the T75 **southeast quadrant** airspace use one primary jet route departure heading, approximately 120° that transitions to a total of two (2) T75 SE flow/southeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace jet departures are the same as those for

southeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 southeast flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of three (3) T75 SE flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace turboprop/prop departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 (SE Flow); T75 - SW Quadrant Airspace Departures

Alternative 6 **southeast flow** jet departures from the T75 **southwest quadrant** airspace use two primary jet route departure headings, approximately 120° and 135°, that transitions to a total of four (4) T75 SE flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace jet departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 southeast flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of five (5) T75 SE flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace turboprop/prop departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 (SE Flow); T75 - NW Quadrant Airspace Departures

Alternative 6 **southeast flow** jet departures from the T75 **northwest quadrant** airspace use three primary jet route departure headings, approximately 100°, 120° and 135°,that transition to a total of three (3) T75 SE flow/northwest quadrant jet transition route headings. Representative city destinations for these T75 SE flow/northwest quadrant airspace jet departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 southeast flow turboprop and propeller departures to the T75 northwest quadrant use one primary turboprop/prop route departure headings of approximately 090° that transitions to a total of three (3) T75 SE flow/northwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northwest quadrant airspace turboprop/prop departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 – STL Northwest Runway Departure Flows

The Alternative 6 northwest runway(s) departure flows (i.e., Runways 29, 30L and 30R) also move to a four (4) sector departure airspace boundary configuration. This new sector boundary configuration allows for greater flexibility in handling peak hour arrival and departure ATC service demand levels.

Alternative 6 (NW Flow); T75- NE Quadrant Airspace Departures

Alternative 6 **northwest fl**ow jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of three (3) T75 NW flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 northwest flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 350° that transitions to a total of three (3) T75 NW flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace turboprop/prop departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 (NW Flow); T75 - SE Quadrant Airspace Departures

Alternative 6 **northwest flow** jet departures to the T75 **southeast quadrant** airspace use three primary jet route departure headings, approximately 285°, 305° and 335°, that transition to a total of two (2) T75 NW flow/southeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/southeast quadrant airspace jet departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 northwest flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of two (2) T75 NW flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southeast quadrant airspace turboprop/prop departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 6 (NW Flow); T75 - SW Quadrant Airspace Departures

Alternative 6 **northwest flow** jet departures from the T75 **southwest quadrant** airspace use one primary jet route departure heading, approximately 305° that transitions to a total of four (4) T75 NW flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace jet departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 northwest flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of five (5) T75 NW flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace turboprop/prop departures are the same as those for southwest quadrant

departures identified in the Future Baseline alternative.

Alternative 6 (NW Flow); T75 - NW Quadrant Airspace Departures

Alternative 6 **northwest flow** jet departures from the T75 **northwest quadrant** airspace use one primary jet route departure heading, approximately 335°, that transitions to a total of three (3) T75 NW flow/northwest quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northwest quadrant airspace jet departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 6 northwest flow turboprop and propeller departures to the T75 northwest quadrant use one primary turboprop/prop route departure heading, approximately 350° that transitions to a total of four (4) T75 NW flow/northwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northwest quadrant airspace turboprop/prop departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

A.2.4 Alternative 10 – Hybrid (i.e., Alts 4A & 6) Arrival Alternative, Restructured Departure Alternative

This alternative also moves arrivals to a four-corner post operation that is more like the Future Baseline in relation to the alignment of primary Lambert-St. Louis International Airport runways. Two (2) new departure procedures are developed for this alternative and two (2) existing departure procedures are abandoned. Airspace is divided into 3 departure sectors to allow for more flexibility in managing arrival and departure flows than the Future Baseline Alternative based upon peak hour ATC service demand levels.

As in Alternatives 4A and 6, Alternative 10 final arrival runway alignments and initial jet departure runway headings are reflected to coincide with those changes identified in the Lambert-St. Louis International Airport New Runway (WIW) EIS. Since the new runway (11/29) has been approved through the analysis and findings of this previous EA document, this airspace redesign EA has assumed the establishment of this new runway in the analysis and evaluation of terminal airspace redesign alternatives that are outside of the Lambert-St. Louis International Airport environs analyzed in the previously conducted runway EA.

Alternative 10 – STL Southeast Runway Departure Flows

The southeast runways departure flows (e.g., Runways 12L, 12R and 11) of Alternative 10 move to a three (3) sector departure airspace boundary configuration. This new sector boundary configuration allows for greater flexibility than the Future Baseline Alternative in handling peak hour arrival and departure ATC service demand levels.

Alternative 10 (SE Flow); T75- NE Quadrant Airspace Departures

Alternative 10 **southeast flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 100° , that transitions to a total of four (4) T75 SE flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 southeast flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 090° that transitions to a total of four (4) T75 SE flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northeast quadrant airspace turboprop/propeller departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 (SE Flow); T75 - SE Quadrant Airspace Departures

Alternative 10 **southeast flow** jet departures to the T75 **southeast quadrant** airspace use two primary jet route departure headings, approximately 100° and 120°, that transition to a total of three (3) T75 SE flow/southeast quadrant jet transition route headings. This alternative differs from the Future Baseline Alternative in that the

RAMMS-NABB departure procedure is added to southeast quadrant departures in this alternative. Representative city destinations for these T75 SE flow/southeast quadrant airspace jet departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 southeast flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 170° that transitions to a total of two (2) T75 SE flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southeast quadrant airspace turboprop/propeller departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 (SE Flow); T75 - SW Quadrant Airspace Departures

Alternative 10 **southeast flow** jet departures to the T75 **southwest quadrant** airspace use two primary jet route departure headings, approximately 120° and 135°, that transitions to a total of four (4) T75 SE flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace jet departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 southeast flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 190° that transitions to a total of four (4) T75 SE flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/southwest quadrant airspace turboprop/propeller departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 (SE Flow); T75 - NW Quadrant Airspace Departures

Alternative 10 **southeast flow** jet departures to the T75 **northwest quadrant** airspace use three primary jet route departure headings, approximately 100°, 120o and 135°, that transition to a total of three (3) T75 SE flow/northwest quadrant jet transition route headings. A new OZARK-KIRKSVILLE (northwest) departure procedure is added above and beyond the procedures used in the Future Baseline Alternative.

Representative city destinations for these T75 SE flow/northwest quadrant airspace jet departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 southeast flow turboprop and propeller departures to the T75 northwest quadrant use two primary turboprop/prop route departure headings of approximately 090° and 190°. These headings transition to a total of four (4) T75 SE flow/northwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 SE flow/northwest quadrant airspace turboprop/propeller departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 – STL Northwest Runway Departure Flows

The Alternative 10 northwest runway(s) departure flows (i.e., Runways 29, 30L and 30R) also moves to a four (4) sector departure airspace boundary configuration. Again, this new sector boundary configuration allows for greater flexibility in handling peak hour arrival and departure ATC service demand levels.

Alternative 10 (NW Flow); T75- NE Quadrant Airspace Departures

Alternative 10 **northwest flow** jet departures to the T75 **northeast quadrant** airspace use one primary jet route departure heading, approximately 335° that transitions to a total of three (3) T75 NW flow/northeast quadrant jet transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace jet departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 northwest flow turboprop and propeller departures to the T75 northeast quadrant use one primary turboprop/prop route departure heading, approximately 355° that transitions to a total of three (3) T75 NW flow/northeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/northeast quadrant airspace turboprop/prop departures are the same as those for northeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 (NW Flow); T75 - SE Quadrant Airspace Departures

Alternative 10 **northwest flow** jet departures to the T75 **southeast quadrant** airspace use one primary jet route departure heading, approximately 335°, that transitions to a total of three (3) T75 SE flow/southeast quadrant jet transition route headings. This alternative differs from the Future Baseline Alternative in that the RAMMS-NABB departure procedure is added to southeast quadrant departures in this alternative. Representative city destinations for these T75 NW flow/southeast quadrant airspace jet departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 northwest flow turboprop and propeller departures to the T75 southeast quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of three (3) T75 NW flow/southeast quadrant turboprop/prop transition route headings. Representative city destinations for these T75 southeast quadrant airspace turboprop/prop departures are the same as those for southeast quadrant departures identified in the Future Baseline alternative.

Alternative 10 (NW Flow); T75 - SW Quadrant Airspace Departures

Alternative 10 **northwest flow** jet departures from the T75 **southwest quadrant** airspace use one primary jet route departure heading, approximately 305° that transitions to a total of four (4) T75 NW flow/southwest quadrant jet transition route headings. Representative city destinations for these T75 southwest quadrant airspace jet

departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 northwest flow turboprop and propeller departures to the T75 southwest quadrant use one primary turboprop/prop route departure heading, approximately 255° that transitions to a total of five (5) T75 NW flow/southwest quadrant turboprop/prop transition route headings. Representative city destinations for these T75 NW flow/southwest quadrant airspace turboprop/prop departures are the same as those for southwest quadrant departures identified in the Future Baseline alternative.

Alternative 10 (NW Flow); T75 - NW Quadrant Airspace Departures

Alternative 10 **northwest flow** jet departures to the T75 **northwest quadrant** airspace use two primary jet route departure headings, approximately 305° and 335°, that transitions to a total of four (4) T75 NW flow/northwest quadrant jet transition route headings. A new OZARK-KIRKSVILLE (northwest) departure procedure is used in the Future Baseline Alternative.

Representative city destinations for these T75 NW flow/northwest quadrant airspace jet departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative

Alternative 10 northwest flow turboprop and propeller departures to the T75 northwest quadrant use two primary turboprop/prop route departure heading, approximately 315° that transition to a total of four (4) T75 NW flow/northwest quadrant turboprop/prop transition route headings. Note that the CARDS-NEENS and CARDS-LEBOY departures are still used in this particular alternative. Representative city destinations for these T75 NW flow/northwest quadrant airspace turboprop/prop departures are the same as those for northwest quadrant departures identified in the Future Baseline alternative.

Appendix A Endnotes

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[1] Reference: Final Environmental Impact Statement; Lambert-St. Louis International Airport, City of St. Louis, St. Louis County, Missouri, December 1997. The EA addressed; "the environmental impacts anticipated by the proposed action(s) identified in the 1996 Master Plan Supplement for Lambert-St. Louis International Airport. Specifically, (the) EA includes the evaluation of the following projects and associated development actions which are proposed by the City of St. Louis: Acquisition of Land, new runway, taxiways, lighting, navigational aids, air traffic procedures (i.e., airport related), associated grading, drainage, and utility relocations, realignment of Natural Bridge Road, Lambert International Boulevard, Fee-Fee Road, Gist Road, and McDonnell Blvd., realignment and tunneling of Lindbergh Blvd., relocation of Missouri Air National Guard, acquisition and relocation of Navy/Marines Corps Reserve Facilities, relocation of airport/airline support facilities and renovations to existing terminal building.